

What is claimed is:

1. A mobile phone having at least one main clock system and operating based on a main clock signal of said main clock system, wherein said main clock system comprising:

5 a main counter for counting main clocks of said main clock signal; and

power saving means for stopping generation of said main clock signal for a time period, while counting wait clocks of a wait clock signal, for
10 restarting the generation of said main clock signal after the time period, and for controlling said main counter said main counter based on the counted wait clocks as if said main counter always counts said main clocks of said main clock signal.

2. The mobile phone according to claim 1, wherein said power saving means comprises:

stop control means for stopping the generation of said main clock signal;

5 correction control means for counting said wait clocks of said wait clock signal for the time period during which the generation of said main clock signal is stopped, and for correcting a count value of said main counter based on the counted wait clocks;

10 and

restart control means for restarting the

generation of said main clock signal after said time period elapses, such that said main counter counts said main clocks from the corrected count value.

3. The mobile phone according to claim 1, wherein a frequency of said main clock signal is larger than a frequency of said wait clock signal.

4. The mobile phone according to claim 1, wherein the time period during which the generation of said main clock signal is stopped is predetermined.

5. The mobile phone according to claim 1, wherein said correction control means comprises:

counting means for counting said wait clocks of said wait clock signal for the time period during
5 which the generation of said main clock signal is stopped; and

calculating means for calculating said main clocks while the generation of said main clock signal is stopped; and

10 setting means for correcting the count value of said main counter based on the calculated main clocks.

6. The mobile phone according to claim 5, wherein said calculating means comprises:

ratio means for determining a frequency ratio
of a frequency of said main clock signal to a
5 frequency of said wait clock signal;

read means for reading out a count value from
said main counter when the generation of said main
clock signal is stopped; and

means for calculating said main clocks while
10 the generation of said main clock signal is stopped,
based on the counted wait clocks of said wait clock
signal.

7. The mobile phone according to claim 6,
further comprising:

a battery; and

first driving means for driving said ratio
5 means when a voltage of said battery changes.

8. The mobile phone according to claim 6,
further comprising:

temperature sensor; and

second driving means for driving said ratio
5 means when said temperature sensor senses change of a
temperature of said mobile phone.

9. The mobile phone comprising first and second
main clock systems, each of which is same as said main
clock system.

10. A mobile phone according to claim 9, wherein said wait clock signal is shared by said first and second main clock systems.

11. A mobile phone having at least one main clock system, said main clock system comprising:

a main clock generator which generates a main clock signal;

5 a main counter which carries out a counting operation of main clock of said main clock signal in response to said main clock signal generated by said main clock generator; and

a processor which stops the counting
10 operation of said main counter by stopping the generation of said main clock by said main clock generator before entering a waiting operation and changes a count value of said main counter as if the counting operation of said main counter has been not
15 stopped when going out of the waiting operation.

12. The mobile phone according to claim 11, wherein said processor comprises:

a wait timer which carries out a counting operation of wait clocks of a wait clock signal in
5 response to a wait clock signal for a predetermined time corresponding to a time period during which the generation of said main clock signal is stopped; and

a CPU which operates based on the count value
of said main counter in response to said main clock
10 signal.

13. The mobile phone according to claim 12,
wherein said wait timer which stops the operations of
said main counter and said CPU by stopping the
generation of said main clock signal by said main
5 clock generator in response to an instruction from
said CPU, and controls said main clock generator to
restart the generation of said main clock signal and
said CPU to change a count value of said main counter,
after said predetermined time elapses.

14. The mobile phone according to claim 12,
wherein said CPU changes the count value of said main
counter by adding data corresponding to the number of
said main clocks while the counting operation of said
5 main counter is stopped, to the count value of said
main counter.

15. The mobile phone according to claim 14,
wherein said CPU calculates said data to be added,
based on said wait clocks counted by said wait timer
during said predetermined time.

16. The mobile phone according to claim 15,

wherein said processor further comprises:

a clock precision unit which holds a ratio of
a frequency of said main clock signal to a frequency
5 of said wait clock signal, and

wherein said CPU calculates said data by
multiplying said wait clocks counted by said wait
timer by said ratio held by said clock precision
measuring unit.

17. The mobile phone according to claim 12,
wherein said predetermined time is set in said wait
timer by said CPU before said wait timer stops the
generation of said main clock signal by said main
5 clock generator.

18. A mobile phone having two main clock systems,
each of which comprises:

a main clock generator which generates a main
clock signal;

5 a main counter which carries out a counting
operation of main clock of said main clock signal in
response to said main clock signal generated by said
main clock generator; and

a processor which stops the counting
10 operation of said main counter by stopping the
generation of said main clock by said main clock
generator before entering a waiting operation and

changes a count value of said main counter as if the counting operation of said main counter has been not
15 stopped when going out of the waiting operation.

19. The mobile phone according to claim 18,
wherein said processor comprises:

a wait timer which carries out a counting operation of wait clocks of a wait clock signal in
5 response to a wait clock signal for a predetermined time corresponding to a time period during which the generation of said main clock signal is stopped; and
a CPU which operates based on the count value of said main counter in response to said main clock
10 signal.

20. The mobile phone according to claim 19,
wherein said wait timer is shared by said two main clock systems.

21. A method of saving power consumption in a mobile phone having at least one main clock system and operating based on a main clock signal of said main clock system, wherein said method comprising the steps
5 of:

(a) counting main clocks of said main clock signal;

(b) stopping generation of said main clock

signal for a time period, while counting wait clocks
10 of a wait clock signal;

(c) restarting the generation of said main
clock signal after the time period; and

(d) restarting the counting operation of said
main clock of said main clock signal from preset data
15 corresponding to said counted wait clocks of said wait
clock signal.

22. The mobile phone according to claim 21,
wherein said step (b) comprises the step of:

(e) counting said wait clocks of said wait
clock signal for the time period;

5 (f) calculating said preset data based on a
count value of said main counter based on said counted
wait clocks of said wait clock signal; and

(g) setting said preset data.

23. The method according to claim 21, wherein a
frequency of said main clock signal is larger than a
frequency of said wait clock signal.

24. The method according to claim 21, wherein the
time period is predetermined.

25. The method according to claim 22, wherein
said step (f) comprises the steps of:

(h) determining a frequency ratio of a
frequency of said main clock signal to a frequency of
5 said wait clock signal;

 multiplying said counted wait clocks of said
wait clock signal by said frequency ratio; and

 adding the counted main clocks when the
generation of said main clock signal is stopped, to
10 the multiplying result.

26. The method according to claim 25, further
comprising the step of:

 carrying said step (h) when a voltage of a
battery changes.

27. The method according to claim 25, further
comprising the step of:

 carrying said step (h) when a temperature of
said mobile phone changes.